

Interim Approach In Peak Flows Policy
Side Stream Treatment in Blending Scenarios

Overview of Approach:

Deliberative Process / Ex. 5

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Discussion of Approach

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Background: Technology Issues

- Different technologies can be used for side treatment
 - Technologies include ballasted flocculation, settling (lagoons), polymer addition, trickling filters, and biologically enhanced ballasted flocculation, sand filtration.
 - The performance of the different approaches varies – some are able to meet secondary treatment performance standards, while others do not.
 - Technologies that do not provide biological treatment typically focus on removal of solids.
- Most technologies provide physical/chemical treatment, which focuses on TSS removal, but do not remove soluble BOD
These include, ballasted floc
- Two recent studies, one by the Interstate Environmental Commission in conjunction with EPA's ORD and the Water Environment Research Foundation, measured pathogens in blended POTW flows.
 - The studies considered facilities where flows diverted around biological treatment received only primary treatment (no side stream treatment) prior to recombination and disinfection.
 - The studies found that generally, flows that did not receive secondary treatment had higher pathogen levels than flows that received secondary treatment
 - TSS particles in primary treated effluent contained high levels of pathogens that were not adequately analyzed when using standard test methods. In addition, TSS particles were thought to decrease the efficiency of disinfection.
 - EPA is not aware of studies on pathogen removal for various side treatment technologies.
- Discuss performance of selected technologies.

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- During work on Blue Plains permit, agreed that permit can approve bypass where Federal or State enforcement order requires implementation of feasible alternatives.
- A number of Federal and State enforcement orders call for side stream treatment at POTWs (some serving combined sewers), including:
 - Toledo, OH (ballasted flocculation)
 - Hamilton County, OH (ballasted flocculation at SSO location)
 - Onondaga County, NY (State order - ballasted flocculation)
 - Cleveland, OH (Ballasted flocculation being considered)
 - Blue Plains (ballasted flocculation)
 - Knoxville, TN (pilot testing biological ballasted flocculation)

Options:

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